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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,633	08/25/2003	Yuji Otake	36069	2523
116	7590	08/18/2004	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			EVANISKO, LESLIE J	
			ART UNIT	PAPER NUMBER
			2854	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/647,633

Applicant(s)

OTAKE ET AL.

Examiner

Leslie J. Evanisko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 is/are allowed.
- 6) ☒ Claim(s) 1 and 4-7 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 07/27/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 2 and 5-7 are objected to because of the following informalities:

With respect to claim 2, it is suggested that the phrase “a mask pressure step in which” in line 7 be deleted since it appears to be a typographical error by applicant.

With respect to claim 5, the term “said work plate” in line 15 has no proper antecedent basis since no work **plate** was previously recited. To correct this problem, it is suggested that the term “plate” in line 15 be deleted. Note that consistent terminology should be used throughout the claims.

Appropriate correction and/or clarification is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any

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inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1 and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomomatsu (US 5,623,872) in view of Taniguchi et al. (US 5,735,203). Tomomatsu teaches a screen printing method comprising a mask attachment step in which the work **4** is brought into contact with the mask plate **2**, a squeegeeing step in which a squeegee **12** is moved on the mask plate **2** in the mask attachment state thereby to fill paste into the pattern holes **2a** of the mask plate **2**, and a plate separating step in which the work **4** is separated from the mask plate stepwise by a plate separating operation of repeating plural times an acceleration and deceleration pattern in which a moving speed  $V$  at which the work is moved in a direction where the work separates from the mask plate is accelerated up to an upper limit speed and thereafter is decelerated up to a lower limit speed, wherein an initial upper limit speed ( $V_{\text{peak}}$  of pattern P4 in Fig. 5) representing the upper limit speed at the start of the plate separating operation is set higher than succeeding upper limit speeds ( $V_{\text{peak}}$  of patterns P5-P8 in Fig. 5) representing the upper limit speeds from the

middle of the plate separating operation on. Particular attention is invited to Figures 2-6 and column 5, lines 1-column 6, line 11 of Tomomatsu.

Although Tomomatsu does not specifically teach a mask pressure step as recited, note that Taniguchi et al. teach a screen printing method including a mask pressure step (Fig. 3a) in which the work is raised by a predetermined margin from a normal height position of a lower surface of the mask plate so that contact between the work and mask plate is in a state of pressure from below is well known in the art. See in particular, Figures 3(a)-3(b) and column 6, lines 52-64 of Taniguchi et al. Furthermore, note one of ordinary skill in the art would recognize that raising the work to the position as shown in Figure 3(a) of Taniguchi et al. allows for better tensioning of the mask screen and more uniform contact between the screen and substrate being printing. In view of this teaching, it would have been obvious to one of ordinary skill in the art to provide the screen printing method of Tomomatsu with a mask pressure step as taught by Taniguchi et al. to insure proper printing onto the work by providing uniform tension/pressure be applied between the work and mask during the printing operation.

With respect to claims 4 and 7, note Tomomatsu teaches the work **4** is separated from the mask plate **2** by causing the work to descend. See column 4, lines 37-44 and column 5, lines 19-23 in particular.

With respect to claims 5 and 6, note Tomomatsu teaches a screen printing method comprising a mask attachment step, a squeegeeing step, and a

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plate separating step in which a plate separating operation of moving the work in the direction where the work separates from the mask plate is performed, wherein *in the start of the plate separating operation*, the moving speed  $V$  is broadly accelerated up to an upper limit speed (i.e.,  $V_{\text{peak}}$  of pattern P4) and thereafter is broadly decelerated up to a lower limit speed (i.e., the bottom of pattern P4,  $V=0$ ). Again, see Figure 5 of Tomomatsu in particular. Note that in considering only the start of the plate separating operation as specifically recited in claims 5 and 6, the start of the plate separating operation in Tomomatsu is taken to be comprised by the pattern P4 shown in Figure 5 and therefore, does not include repeated acceleration and deceleration since both the acceleration and deceleration are performed continuously.

Again, although Tomomatsu does not teach a mask pressure step as recited, note that Taniguchi et al. teach a screen printing method including a mask pressure step in which the work is raised by a predetermined margin from a normal height position of a lower surface of the mask plate so that contact between the work and mask plate is in a state of pressure from below. See in particular, Figures 3(a)-3(e) and column 6, lines 55-64 of Taniguchi et al. In view of this teaching, it would have been obvious to one of ordinary skill in the art to provide the screen printing method of Tomomatsu with a mask pressure step as taught by Taniguchi et al. to insure proper printing onto the work by providing a uniform tension/pressure between the work and mask during the printing operation.

***Allowable Subject Matter***

5. Claim 2 is objected to for the reasons set forth above, but would be allowable if rewritten to overcome the above objection to the satisfaction of the Examiner.

6. Claims 3 is allowed.

7. With respect to claims 2-3, note the previous comments regarding the reasons for indicating allowable subject matter as set forth on page 5 of the Office Action mailed February 25, 2004.

***Response to Arguments***

8. Applicant's arguments with respect to claims 1 and 4-7 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tamura (JP 3-75148), Tani (US 6,129,014), and Tanaka (US 6,412,408) each teach a screen printing method including raising the work past a contact position between the work and screen mask to provide pressure/tension on the mask from below.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Leslie J. Evanisko** whose telephone number is **(571) 272-2161**. The examiner can normally be reached on M-Th 7:30 am-6:00 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew H. Hirshfeld can be reached on (571) 272-2168.



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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Leslie J. Evanisko  
Primary Examiner  
Art Unit 2854

lje  
August 13, 2004